CLAIMS

We claim:

1.   A computer-implemented method for routing calls from at least one caller to a subscriber of telecommunications services, wherein at least one call from the caller is routed from a local telecommunications network to a distant central telecommunications server, wherein the local telecommunications network includes a local dialable network that differs from a local dialable network to which the central telecommunications server is associated, the method comprising:

at a local controller coupled to and associated with the local telecommunications network, receiving from the local telecommunications network an incoming call from a calling number associated with a caller, to a called number associated with the subscriber;

at the local controller, locally storing at least the called number associated with the caller;

at the local controller, initiating a 1-800 call to the central telecommunications server over a 1-800 network via the local telecommunications network;

at the local controller, transferring the called number to the central telecommunications server via the 1-800 call over the 1-800 network;

at the central telecommunications server, receiving the calling and called numbers and retrieving a subscriber profile based on the called number, wherein the subscriber profile is associated with the subscriber and identifies subscriber defined call routing preferences;

at the central telecommunications server, receiving the incoming call; and

at the central telecommunications server, routing the incoming call based on at least one subscriber defined call routing preference in the retrieved subscriber profile.

2. The method of claim 1 wherein locally storing includes storing the calling number, wherein transferring the called number includes transferring to the central telecommunications server the called and calling numbers in available ISDN fields in the 1-800 call, and wherein the method further comprises:

at the central telecommunications server, providing a confirmation message to the local controller, wherein the confirmation message is provided over the Internet;

at the central telecommunications server, providing the incoming call to the local controller;

at the local controller, placing a local call over the local dialable network to the subscriber; and

at the local controller, connecting the incoming call with the local call.

3. The method of claim 1 wherein the central telecommunications server and local controller are coupled to a second 1-800 network, and wherein the method further comprises:

at the central telecommunications server, providing a first error message to the local controller;

at the local controller, providing the dialing number to the central telecommunications server as in-band signaling in response to the first error message;

at the central telecommunications server, providing a second error message to the local controller;

at the local controller, initiating another 1-800 call to the central telecommunications server over the second 1-800 network in response to the second error message;

at the central telecommunications server, providing the incoming call to one of a plurality of local controllers;

at the one local controller, placing a local call to the subscriber; and

at the one local controller, connecting the incoming call with the local call.

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1   4.   An apparatus for routing calls for a subscriber from a local

2   telecommunications network to a distant central telecommunications server, the apparatus

3   comprising

4   a memory,

5   a computer coupled to the memory, and

6   a telecommunications call handling subsystem coupled between the local

7   telecommunications network and the computer, wherein the computer and call handling

8   subsystem are configured to:

9   receive a call from a first number to a second number associated with

10   the subscriber; store in the memory at least the second number; initiate a 1-800 call to

11   the central telecommunications server over a 1-800 network via the local

12   telecommunications network; and transfer at least the second number to the central

13   telecommunications server via the 1-800 call over the 1-800 network.

1   5.   The apparatus of claim 4 wherein transferring at least the second

2   number includes transferring to the central telecommunications server the called and calling

3   numbers in ISDN fields in the 1-800 call, and wherein the computer and call handling

4   subsystem are further configured to:

5   provide the second number to the central telecommunications server as

6   in-band signaling in response to a first error message received from the central

7   telecommunications server;

8   initiate another 1-800 call to the central telecommunications server over

9   a second 1-800 network in response to a second error message received from the

10   central telecommunications server; and

11   connect the call with the 1-800 call in response to an acknowledgement

12   message received from the central telecommunications server.

1   6.   The apparatus of claim 4 wherein the computer and call handling

2   subsystem are further configured to:

3   receive a routing message from the central telecommunications server;

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4   place a local call over the local dialable network to the subscriber based

5   on the received routing message; and

6   connect the call with the local call.

1   7.   The apparatus of claim 4 wherein the computer is further coupled to the

2   Internet, and wherein the computer and the call handling subsystem are further configured to:

3   provide a first message over the Internet to the central

4   telecommunications server, wherein the first message is provided in response to the

5   call;

6   receiving a second message central telecommunications server over the

7   Internet, from central telecommunications server.

1   8.   The apparatus of claim 4 wherein transferring at least the second

2   number includes transferring to the central telecommunications server the calling number as

3   DTMF signaling.

1   9.   The apparatus of claim 4 wherein transferring at least the second

2   number includes transferring to the central telecommunications server the called number in

3   an available ISDN field in the 1-800 call.

1   10.   The apparatus of claim 4 wherein the apparatus is coupled to a second

2   1-800 network, and wherein the computer and call handling subsystem are further configured

3   to:

4   initiate a 1-800 call to the central telecommunications server over the

5   second 1-800 network in response to a message received from the central

6   telecommunications server.

1   11.   The apparatus of claim 4 wherein the apparatus is coupled to a second

2   1-800 network and a second central telecommunications server, and wherein the computer

3   and call handling subsystem are further configured to:

4   initiate a 1-800 call to the second central telecommunications server over the

5   second 1-800 network in response to a switch message or lack of an acknowledgment

6   message from the central telecommunications server.

1   12.   The apparatus of claim 4 wherein the computer and call handling

2   subsystem are further configured to:

3   provide voice scripts to the received call; and

4   receive and store in the memory a voice message.

1   13.   The apparatus of claim 4 wherein the computer and call handling

2   subsystem are further configured to:

3   receive and store in the memory a voice message based on the call; and

4   forward to the central telecommunications server the stored voice

5   message.

1   14.   The apparatus of claim 4 wherein a caller places the call from the first

2   number, and wherein the computer and call handling subsystem are further configured to:

3   provide voice scripts to the caller;

4   initiate the 1-800 call to a first 1-800 number based on a first input

5   signal received from the caller; and

6   initiate another 1-800 call to another 1-800 number based on a second

7   input signal received from the caller.

15.   The apparatus of claim 4 wherein the computer and call handling subsystem are coupled to the Internet and are further configured to:

provide an alert message to the subscriber over the Internet based on the received called; and

receive a call disposition message from the subscriber that indicates how the received call is to be routed.

16.   The apparatus of claim 4 wherein transferring at least the second number includes transferring to the central telecommunications server the called number in an in-band signal associated with the 1-800 call.

17.   The apparatus of claim 4 wherein transferring at least the second number includes transferring to the central telecommunications server the called number in an out-of-band signal associated with the 1-800 call during set up of the 1-800 call.

18.   The apparatus of claim 4 wherein the computer is coupled to a computer network, and wherein transferring at least the second number includes transferring to the central telecommunications server over the computer network the called number in an Internet Protocol (IP) message.

19.   The apparatus of claim 4 wherein the computer and call handling subsystem are further configured to:

receive a routing message from the central telecommunications server;

place another 1-800 call to another apparatus based on the received routing message, wherein the another apparatus is substantially similar to the apparatus; and

connect the call with the another 1-800 call.

1   20.   An apparatus for routing calls for a subscriber from a first Private

2 Branch Exchange ("PBX") network to a distant central telecommunications server, the

3 apparatus comprising

4   a memory,

5   a computer coupled to the memory, and

6   a telecommunications call handling subsystem coupled between the PBX

7 network and the computer, wherein the computer and call handling subsystem are configured

8 to:

9   receive a call from a first number to a second number associated with

10 the subscriber; store in the memory at least the first number; initiate a dial-up call to

11 the central telecommunications server over a dial-up network via the local

12 telecommunications network; transfer at least the first number to the central

13 telecommunications server via the dial-up call over the dial-up network, and transfer

14 the received call to the central telecommunications server, wherein the central

15 telecommunications server is capable of routing the received call to a second PBX.

1   21.   An apparatus for routing calls for a subscriber from a local

2 telecommunications network to a distant central telecommunications server, the apparatus

3 comprising:

4   receiving means for receiving, from the local telecommunications network, a

5 call from a first number, to a second number associated with the subscriber;

6   storage means, coupled to the receiving means, for locally storing at least the

7 second number;

8   call initiating means, coupled to the storage means, for initiating a 1-800 call to

9 the central telecommunications server over a 1-800 network via the local telecommunications

10 network; and

11   call transferring means, coupled to the call initiating means, for transferring at

12   least the first number to the central telecommunications server via the 1-800 call over the 1-

13   800 network.

1   22.   An apparatus for routing calls for a subscriber from a local controller

2   coupled to a local telecommunications network, the apparatus comprising

3   a memory,

4   a computer coupled to the memory, and

5   a telecommunications call handling subsystem coupled between a 1-800

6   network and the computer, wherein the computer and call handling subsystem are configured

7   to:

8   receive a 1-800 call over a 1-800 network from the local controller

9   based on a call received by the local controller from a first number to a second

10   number associated with the subscriber; receive the first and second numbers from the

11   local controller via the 1-800 call over the 1-800 network; and determine routing of

12   the call based on the received first and second numbers.

1   23.   The apparatus of claim 22 wherein the telecommunications call handling

2   subsystem is coupled to a second 1-800 network, and wherein the computer and call handling

3   subsystem are further configured to:

4   instruct the local controller to place at least some 1-800 calls over the

5   second 1-800 network.

1   24.   The apparatus of claim 22 wherein the computer gathers metrics based

2   on calls received from the 1-800 network.

1   25.   The apparatus of claim 22 computer and call handling subsystem are

2   coupled to the Internet and are further configured to:

3   provide a locator message to another local controller over the Internet,

4   based on the call received by the local controller; and

5   receive an indication message over the Internet from the another local

6   controller of whether the subscriber is within a local telecommunications network

7   associated with the another local controller.

1   26.   A computer-readable medium whose contents cause an apparatus to

2 route calls for a subscriber from a local telecommunications network to a distant central

3 telecommunications server, comprising:

4   receiving, from the local telecommunications network, a call from a first

5 number, to a second number associated with the subscriber;

6   locally storing at least the second number;

7   initiating a dial-up call to the central telecommunications server over a dial-up

8 network via the local telecommunications network; and

9   transferring at least the second number to the central telecommunications

10 server via the dial-up call over the dial-up network.

1   27.   The computer-readable medium of claim 26 wherein the computer-

2 readable medium is a logical node in a computer network receiving the contents.

1   28.   The computer-readable medium of claim 26 wherein the computer-

2 readable medium is a computer-readable disk.

1   29.   The computer-readable medium of claim 26 wherein the computer-

2 readable medium is a data transmission medium transmitting a generated data signal

3 containing the contents.

1   30.   The computer-readable medium of claim 26 wherein the computer-

2 readable medium is a memory of a computer.

1   31.   A method for routing calls for a subscriber from a local

2 telecommunications network to a central telecommunications server, wherein a long distance

3   telephone call is necessary to connect calls from the local telecommunications network to the

4   central telecommunications server, the method comprising:

5   receiving a request to establish a 1-800 call over a 1-800 network from a local

6   controller based on a call received by the local controller from a first number to a second

7   number associated with the subscriber, wherein the 1-800 network is coupled to the local

8   telecommunications network;

9   establishing the 1-800 call to the central telecommunications server and

10 providing the first and second numbers to the central telecommunications server via the 1-

11 800 call over the 1-800 network, wherein at least the second number is provided: in an in-

12 band signal with the 1-800 call, in an available field in an out-of-band signal during

13 establishment of the 1-800 call, or in an Internet Protocol ("IP") message provided to the

14 central telecommunications server over a separate IP data network.

1   32.   The method of claim 31, further comprising, receiving instructions to

2   establish 1-800 calls to another central telecommunications server when requests to establish

3   1-800 calls are received from the local controller.

1   33.   A computer-readable medium containing a data structure for use with a

2   local controller that routes calls received for a subscriber, wherein the calls are received from

3   a local telecommunications network, the data structure comprising:

4   a first number field comprising a first server dial-up number associated with a

5   first central telecommunications server;

6   a first subscriber number field comprising a first subscriber dial-up number;

7   and

8   a second subscriber number field comprising a second subscriber dial-up

9   number, wherein the first and second subscriber dial-up numbers are associated with first and

10 second different call handling facilities of the subscriber, and wherein the local controller

11 receives calls to the subscriber via the local telecommunications network that are to be routed

12 to the first central telecommunications server or first or second facilities based on first,

13 second or third caller-provided instruction signals, respectively.

34. A method for routing calls for a subscriber from a local telecommunications network to a distant central telecommunications server, the method comprising:

identifying at least first and second dial-up networks associated with respective first and second dial-up service providers, wherein the first and second dial-up service providers are different;

selecting the first or second dial-up network based on at least one criterion;

receiving from the local telecommunications network, a call from a first number, to a second number associated with the subscriber;

initiating a dial-up call to the central telecommunications server over the selected dial-up network via the local telecommunications network; and

transferring at least the first number to the central telecommunications server via the dial-up call over the selected dial-up network.

35. The method of claim 34 wherein the criterion is cost and the first dial-up network and service provider are a 1-800 network and 1-800 service provider, respectively.

36. The method of claim 34 wherein the criterion is reliability.

37. The method of claim 34 wherein the criterion is load balancing between the central telecommunications server and anther central telecommunications server.

38. The method of claim 34, further comprising:

gathering metrics based on calls to the first and second dial-up networks; and

providing, for a fee, the gathered metrics.

39. The method of claim 34 wherein selecting the first or second dial-up network comprises negotiating, via electronic message exchange, a lowest price between the first and second dial-up service providers.